# Solutions of electromagnetic and gravitational fields under certain conditions

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**Abstract:** Solutions of electromagnetic and gravitational fields under certain conditions.

**Key words**: Electromagnetic field, Gravitational field, Thermodynamics.

$$1.\ \frac{(e_o)}{(4\pi)(\varepsilon_0)(r_e)} = \frac{(h)}{(4\pi)(a_0)^2(4\pi)(a_0)^2},$$

$$2.\ \frac{(e_o)}{(4\pi)(\varepsilon_0)(a_0)} = \frac{(G_N)}{(4\pi)(a_0)^2(2\pi)(R_\infty)},$$

$$3.\ \frac{(e_o)}{(4\pi)(\varepsilon_0)(a_0)} = \frac{(m_{atom})(G_N)}{(4\pi)(a_0)^2(2\pi)^2(a_0)^2},$$

$$4.\ \frac{(e_o)}{(4\pi)(\varepsilon_0)(a_0)} = \frac{(m_e)(G_N)(c)^2}{(h)(c)},$$

$$5.\ \frac{(e_o)}{(4\pi)(\varepsilon_0)(a_0)} = \frac{(c)}{(R_\infty)},$$

$$6.\ \left[\frac{(e_o)}{(4\pi)(\varepsilon_0)}\right]^2 = \frac{1}{2}(m_e)[\alpha_o]^2(c)^2,$$

$$7.\ \left[\frac{(e_o)}{(4\pi)(\varepsilon_0)}\right]^2 = \frac{(m_{atom})(c)^2}{(2\pi)(R_\infty)},$$

$$8.\ \frac{(e_o)^2}{(4\pi)(\varepsilon_0)(a_0)^2} = \frac{(m_e)[\alpha_o]^2(c)^2}{(a_0)},$$

$$9.\ \frac{(e_o)^2}{(4\pi)(\varepsilon_0)(a_0)^2} = (2\pi)(R_\infty)(e_o)(c)^2(m_e)(c)^2,$$

$$10.\ \left[\frac{(e_o)}{(4\pi)(\varepsilon_0)(a_0)}\right]^2 = \frac{(m_{atom})}{(2\pi)^4(r_a)(r_e)(R_\infty)(a_0)},$$

$$11.\ \left[\frac{(e_o)}{(4\pi)(\varepsilon_0)(a_0)}\right]^2 = \frac{(m_e)(m_{atom})(R_\infty)}{(4\pi)(a_0)^2(2\pi)^2(a_0)^2(2\pi)(r_a)},$$

$$12.\ \left[\frac{(e_o)}{(4\pi)(\varepsilon_0)(2\pi)(a_0)}\right]^3 = \frac{(m_{atom})(c)^2(m_e)(c)^2(2\pi)(r_a)(c)^2(2\pi)(r_e)(c)^2}{(2\pi)^2(a_0)^2}.$$

$$1.\ \frac{(m_{atom})(G_N)}{(a_0)^2} = (2\pi)^3(e_o),\quad 2.\ \frac{(m_{atom})(G_N)(c)^2}{(r_a)^2} = \frac{(h)}{(4\pi)(r_a)^2(2\pi)(r_a)},$$

$$3.\ \frac{(m_e)(G_N)}{(2\pi)(r_a)} = \frac{(h)}{(R_\infty)(2\pi)(r_a)},\quad 4.\ \frac{(m_e)(G_N)}{(k_B)} = (m_e)[\alpha_o]^2(c)^2,$$

$$5.\ \left[\frac{(m_{atom})(G_N)}{(4\pi)(a_0)^2}\right]^2 = (2\pi)^2(m_{atom})^2(c)^2,\quad 6.\ \frac{(m_{atom})(G_N)}{(4\pi)(a_0)^2} * \frac{(m_e)(G_N)}{(4\pi)(a_0)^2} * (c)^2 = \frac{(2\pi)(h)(2\pi)(a_0)}{(a_0)^2},$$

$$7.\ \frac{(e_o)}{(4\pi)(\varepsilon_0)} * \frac{(m_e)(G_N)}{(4\pi)} * (c)^2 = (h),\quad 8.\ \left[\frac{1}{(R_\infty)^2}\right]^2 * \frac{(8\pi)(R_\infty)(m_{atom})}{(c)^2} = \left[\frac{(4\pi)}{(c)^2}\right]^4,$$

$$9.\ (k_{BG})(k_B) = \frac{(m_e)^2(G_N)(c)^2}{(a_0)^2}/[(e_o)(c)],\quad 10.\ (k_{BGG})(k_B) = \frac{(m_e)^2(R_\infty)^2(G_N)(c)^2}{(e_o)},$$

$$11.\ \left[\frac{1}{(R_\infty)^2}\right]^2 * \frac{(8\pi)(G_N)}{(c)^3} = (4\pi)*\left[\frac{(4\pi)}{(c)^2}\right]^4,$$

$$12.\ \left[\frac{1}{(4\pi)(\varepsilon_0)} * (4\pi) * \frac{1}{(c)} * (2) * \frac{1}{(c)^2}\right]^2 * \left[(G_N)*(4\pi)*\frac{1}{(c)}*(2)*\frac{1}{(c)^2}\right] = (4\pi)*\left[\frac{(4\pi)}{(c)^2}\right]^4.$$

**Reference**：none.